

Application No. 10/599,548  
Response to Office Action dated October 13, 2009

**Remarks**

Applicants have received and carefully reviewed the Office Action mailed October 13, 2009. Claims 1-20 remain pending. Claims 1-6, 8-16, and 19 have been amended. Support for the amendments can be found in the specification, claims, and drawings as originally filed. No new matter has been added. Reconsideration and allowance of all pending claims are respectfully requested.

**Objection to Drawings**

The drawings were objected to because the reference numerals were hand drawn. Submitted herewith are replacement drawings that address the Examiner's objections.

**Double Patenting**

Claims 1-8 and 10-15 were rejected on the ground of non-statutory double patenting over certain claims of U.S. Patent No. 7,586,213. While Applicants respectfully disagree with this rejection, and if the Examiner elects to maintain this rejection after this Amendment is entered and after the claims are indicated as being otherwise allowable, Applicants will consider filing a terminal disclaimer in view of the '213 patent.

**Claim Objections**

Claim 16 was objected to because the claim recites that the method either operates or closes the gas valve, but there is no indication in the claim that "operating" means that the gas valve is "opened". To move application along, claim 16 has been amended to overcome the Examiner's objection.

**Allowable Subject Matter**

The Examiner indicated that claim 9 would be allowable if rewritten in independent form including all of the elements of the base claim and any intervening claims. Claim 9 has been

rewritten in independent form and now includes most of the elements of independent claim 1 and intervening claims 2-6. Claim 9 is believed to be in condition for allowance.

**Rejections under 35 U.S.C. § 103**

Claims 1-8 and 10-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Auer et al. (U.S. 4,118,750). Applicant must respectfully disagree. Turning first to claim 1, which recites:

1. (Currently Amended) A fail-safe circuit for a piezo-operated gas valve[[s]], the fail-safe circuit comprising:  
at least one input that can be connected to a control device for receiving an input signal from the control device; and  
two output terminals at least one output for providing a control voltage suitable for controlling that can be connected to a gas valve;[[,]]  
where the fail-safe circuit only supplies an output voltage a control voltage between the two output terminals of the fail-safe circuit that is suitable for to opening a gas valve to the at least one output if when an input signal containing at least two different successive frequency signals is provided by a the control device at an input of the fail-safe circuit; and  
wherein the fail-safe circuit maintains the control voltage between the two output terminals of the fail-safe circuit as long as the input signal contains the at least two different successive frequency signals at an input of the fail-safe circuit.

Auer et al. do not appear to teach, disclose or suggest many of the elements of claim 1. For example, Auer et al. do not appear to teach, disclose or suggest a failsafe circuit that includes: a fail-safe circuit having at least one input that can be connected to a control device for receiving an input signal from the control device, and at least two output terminals for providing a control voltage suitable for controlling a gas valve, where the fail-safe circuit only supplies a control voltage between the two output terminals of the fail-safe circuit that is suitable for opening a gas valve when an input signal containing at least two different successive frequency signals is provided by a control device at an input of the fail-safe circuit, and wherein the fail-safe circuit maintains the control voltage between the two output terminals of the fail-safe circuit as long as the input signal contains the at least two different successive frequency signals at an input of the

fail-safe circuit. Auer et al. clearly do not teach, disclose or suggest such a fail-safe circuit, and in particular a fail-safe circuit that maintains the control voltage between the two output terminals of the fail-safe circuit as long as the input signal contains the at least two different successive frequency signals at an input of the fail-safe circuit, as recited in claim 1. As noted in Auer et al., “the circuit of FIG. 2 cannot provide sustained current in either winding” [of the relay K]. In Auer et al., it appears that the relay K must include two windings including an upper winding and a lower winding (see, for example, Auer et al., column 4, lines 67-68). During normal operation, Auer et al. teach to pass a current through only one winding of the relay K at a time and when the current is terminated in one winding, it is initiated in the other winding (see, for example, Auer et al., column 5, lines 1-5). Also, current seems to switch between the two windings when the first frequency signal switches to the second frequency signal, and visa-versa. As such, it would appear that Auer et al. actually teach away from a fail-safe circuit that maintains the control voltage between the two output terminals of the fail-safe circuit as long as the input signal contains the at least two different successive frequency signals at an input of the fail-safe circuit, as recited in claim 1. Also, Auer et al. appear to teach that the relay K is a “biased neutral relay and cannot operate in response to the flow of current in the reverse direction in either or both windings” (see, for example, Auer et al., column 5, lines 27-30).

In any event, Auer et al. clearly do not teach each and every element of claim 1, nor would there appear to be any motivation or other reason to modify the circuit of Auer et al. to arrive at the fail-safe circuit of claim 1. For these and other reasons, claim 1 is believed to be clearly patentable over Auer et al. For similar and other reasons, claims 2-8 and 10-11, which depend from claim 1 and include significant additional distinguishing features, are also believed to be clearly patentable over Auer et al.

Turning now to claim 12, which recites:

12. (Currently Amended) A fail-safe circuit for a gas valve[[s]], the fail-safe circuit comprising:  
at least one input that can be connected to a gas valve controller;

two output terminals for providing a control voltage suitable for controlling at least one output that can be connected to a control input for a gas valve; and

the fail-safe circuit configured to only supply a control voltage between the two output terminals of the fail-safe circuit that is suitable for an output signal to opening a the gas valve via the at least one output of the fail safe circuit if/when the gas valve controller provides an input signal that has having at least two different frequency signals to the at least one input of the fail-safe circuit; and wherein the fail-safe circuit maintains the control voltage between the two output terminals of the fail-safe circuit as long as the input signal contains the at least two different frequency signals at the at least one input of the fail-safe circuit.

For similar reasons to those discussed above with respect to claim 1, as well as other reasons, claim 12 is believed to be clearly patentable over Auer et al. For similar and other reasons, claims 13-15, which depend from claim 12 and include significant additional distinguishing features, are also believed to be clearly patentable over Auer et al.

Turning now to claim 16, which recites:

16. (Currently Amended) A method for controlling a gas valve, the method comprising the steps of:

determining if a gas valve controller is currently providing a valid gas valve control signal;

providing a direct current (dc) control voltage that is suitable for opening the gas valve operating the gas valve in accordance with the gas valve control signal if the determining step determines that the gas valve controller is currently providing a valid gas valve control signal;

maintaining the direct current (dc) control voltage as long as the gas valve controller continues to provide a valid gas valve control signal; and

providing a direct current (dc) control voltage that is suitable for closing the gas valve closing the gas valve if the determining step determines that the gas valve controller is not currently providing a valid gas valve control signal.

For similar reasons to those discussed above with respect to claim 1, as well as other reasons, claim 16 is believed to be clearly patentable over Auer et al. For similar and other reasons, claims 17-20, which depend from claim 16 and include significant additional distinguishing features, are also believed to be clearly patentable over Auer et al.

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**Conclusion**

It is submitted that, in light of the above remarks, all pending claims 1-20 are now in condition for allowance. Reconsideration and reexamination are respectfully requested. If a telephone interview would be of assistance, the Examiner is encouraged to contact the undersigned attorney at 612-359-9348.

Respectfully Submitted,



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